

Draft

Procedure for Identification of Petroleum-Contaminated Soils

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Petroleum-contaminated soil can be identified by the presence of free oil, oil staining, visible sheen, a petroleum odor, the petroleum sheen test, field organic vapor monitoring equipment, or any combination of these.

Free product could potentially drain from the soil during excavation. The appearance of oil staining is not always consistent, but varies depending on the nature of the oil, the soil type, and the age of the release. Staining associated with old petroleum product may be black or brown, or it may have a greenish hue. For soil that is saturated with groundwater, the presence of a visible sheen on the groundwater indicates the presence of petroleum contamination. A petroleum odor may be noted although there is no visible sign of oil or staining. In some instances, decaying organic matter can produce an odor similar to petroleum. The petroleum sheen test is a quick and easy field method that can be used to determine if a soil sample is saturated with petroleum. A photoionization detector or flame ionization detector may also be used to potentially determine whether petroleum-contaminated soils are present.

The effectiveness of the identification techniques will be evaluated at the beginning of and throughout the cleanup activities. Where appropriate, soil samples collected from the excavation will be submitted to an off-Site laboratory for the likely analysis of total petroleum hydrocarbons as diesel- and heavy oil-range organics, volatile organic compounds, semi-volatile organic compounds, and polychlorinated biphenyls. The intent of these analyses is to provide qualitative feedback on the progress of the removal action and to provide baseline data for monitored natural attenuation. The analytical data will be correlated with the field screening results to confirm that the field screening approaches are appropriate and to determine which combination of techniques is best suited for the identification of petroleum-contaminated soil.